["And an old porter to relieve the poor at his gate."]

THE OLD AND YOUNG COURTIER.

The whole of the sixteenth century was marked by important changes of every kind—political, religious, and social. The wars with France and the internal contests of the Roses were over, and the energy of the nation was directed to new objects. Trade and commerce were extended; fresh sources of wealth were developed; and new classes of society sprung into importance, whose riches enabled them to outvie the old landed gentry, but who had few of their hereditary tastes and habits. Hence the innovation of old customs, and the decay of ancient manners, to which the gentry themselves were compelled to conform. The following old song, which is printed in the 'Percy Reliques,' from an ancient black-letter copy in the 'Pepys Collection,' is a lament over the changes which had taken place in the early part of the seventeenth century, as compared with the days of 'Queen Bess.' An account of some of the most striking of these changes will appear in future numbers, and we now give this favourite old song by way of introduction:—

"An old song made by an aged old pate,
Of an old worshipful gentleman, who had a great estate,
That kept a brave old house at a bountiful rate,
And an old porter to relieve the poor at his gate;
Like an old courtier of the queen's,
And the queen's old courtier.

With an old lady, whose anger one word assuages
This (who) every quarter paid their old servants their wages,
And never knew what belonged to coachmen, footmen, nor pages,
But kept twenty old fellows with blue coats and badges;
Like an old courtier, &c.

With an old study fill'd full of learned old books,
With an old reverend chaplain, you might know him by his looks,
With an old buttery hatch worn quite off the hooks,
And an old kitchen, that maintained half a dozen old cooks;
Like an old courtier, &c.

With an old hall hung about with pikes, guns, and bows,
With old swords and bucklers, that had borne many shrewd blows,
And an old frieze coat to cover his worship's trunk hose,
And a cup of old sherry to comfort his copper nose;
Like an old courtier, &c.

With a good old fashion, when Christmas was come,
To call in all his old neighbours with bagpipe and drum,
With good cheer enough to furnish every old room,
And old liquor able to make a cat speak and man dumb;
Like an old courtier, &c.

With an old falconer, huntsman, and a kennel of hounds,
That never hawked nor hunted but in his own grounds,
Who, like a wise man, kept himself within his own bounds,
And when he died gave every child a thousand good pounds;
Like an old courtier, &c.

But to his eldest son his house and land he assigned,
Charging him in his will to keep the old bountiful mind,
To be good to his old tenants, and to his neighbours be kind:
But in the ensuing ditty you shall hear how he was inclin'd;
Like a young courtier of the king's,
And the king's young courtier.

Like a flourishing young gallant, newly come to his land,
Who keeps a brace of painted madams at his command,
And takes up a thousand pounds upon his father's land,
And gets drunk in a tavern till he can neither go nor stand;
Like a young courtier, &c.

With a new-fangled lady, that is dainty, nice, and spare,
Who never knew what belonged to good housekeeping or care,
Who buys gaudy-coloured fans to play with wanton air,
And seven or eight different dressings of other women's hair;
Like a young courtier, &c.

With a new-fashioned hall, built where the old one stood,
Hung round with new pictures that do the poor no good,
With a fine marble chimney, wherein burns neither coal nor wood,
And a new smooth shovel-board whereon no victuals ne'er stood;*
Like a young courtier, &c.

With a new study stuff'd full of pamphlets and plays,
And a new chaplain that swears faster than he prays,
With a new buttery hatch that opens once in four or five days,
And a new French cook to devise fine kickshaws and toys;
Like a young courtier, &c.

With new titles of honour, bought with his father's old gold,
For which sundry of his ancestors' old manors are sold;
And this is the course most of our new gallants hold,
Which makes that good housekeeping is now grown so cold;
Among the young courtiers of the king,
Or the king's young courtiers."

THE PRESSURE OF AIR, IN RELATION TO THE HUMAN BODY.

MEDICAL men and travellers in elevated regions have frequently had occasion to remark the varied effects produced on the human body by the pressure of the atmosphere; but the real extent of these effects is probably not yet understood. Hitherto atmospheric pressure has been more studied in relation to aerostation, weather, the construction and use of the air-pump, and other matters pertaining more or less to natural philosophy, than to its effects on man; and indeed, until observations had been made and recorded by travellers and aeronauts who have ascended into regions where the air is much rarefied, the means for studying its physiological effects were wanting.

It is a well-known truth in pneumatics, that the human body, as well as all substances at the surface of the earth, are pressed by the air with a weight of several pounds per square inch, and that the lungs are fitted to perform the office of inspiration and respiration in an atmosphere of that density. At every act of inspiration, or drawing-in of breath, the quantity inhaled is in some degree dependent on the density of the air, since the same amount of muscular exertion in the lungs will not necessarily lead to the inhalation of the same quantity of air. The density of the air and the muscular energy of the lungs are proportioned to each other at the earth's surface. But when a person is forced to breathe an air highly rarefied, a feeling of distress is experienced, consequent on the difficulty of inhaling a sufficient quantity of air at each movement of the lungs.

During the ascent of a lofty mountain, the sensations here alluded to are generally experienced, because the density of the air diminishes in a certain ratio as we ascend from the earth's surface. Accordingly, those scientific travellers who have reached considerable elevations in the Alps and Andes have not failed to experience the effects of the rarefaction. The first Spaniards who attempted the ascent of the high mountains of America were attacked by sickness and pains in the stomach. The French traveller Bouguer had several hæmorrhages on the Cordilleras of Quito. Zumstein was attacked nearly in a similar manner while ascending Mount Rosa in Switzerland. Saussure was indisposed at the summit of Mont Blanc, and experienced a distressing sensation of faintness; his guides, who were all natives of the valley of Chamouni, were affected in the same manner; and Saussure found that the indisposition increased when he moved, or when, while observing his instruments, he directed his attention to a particular object.

Dr. Holland, in his valuable 'Medical Notes and Reflections,' expresses an opinion that the action of different degrees of atmospheric pressure in disturbing the bodily functions and general health is rather derived from the frequency of fluctuation, than from any state long continued, either above or below the average standard; that, of the two conditions, suddenly incurred in any extreme degree, the human frame is better capable of withstanding a rarefied than a condensed atmosphere; and that, in every case, the previous health and proneness to disorder in particular organs are greatly concerned in determining the results on the body. He supports some of these views from the fact that there are inhabited places in America, such as the town of Potosi, at an elevation of more than thirteen thousand feet, the inhabitants of which seem to have tolerable health. Dr. Holland, after mentioning the circumstance that Mr. Green has ascended with more than four hundred persons in balloons at different times, says, "Mr. Green informs me that he has found none of these individuals sensibly affected, otherwise than by the sudden change of temperature, and by a noise in the ears, compared by some to very distant thunder; the latter sensation occurring only during rapid ascent or descent of the balloon, and, when greatest in degree, far less distressing than that produced by descent in a diving-bell. He has never felt his own respiration hurried or oppressed, except when exerting himself in throwing out ballast, or other management of the balloon, or when suddenly passing into a very cold atmosphere. His pulse is occasionally quickened ten or fifteen beats, and this only when some such exertion has been sustained. He mentions to me expressly, that in no instance have his companions experienced vertigo or sickness."

It might seem, at first thought, that the opinions above expressed are inconsistent with the recorded experience of the travellers who have ascended high mountains. But there is a circumstance which has great influence on these sensations, and ought by no means to be overlooked. The aeronaut who ascends in a balloon has very little muscular exertion during the time that he is in his aerial ship; whereas such men as Saussure, Humboldt, and Boussingault are exposed to the severe fatigue of walking and climbing up hill while exposed to a rarefied atmosphere. We shall presently speak of a particular mode of explanation which has been recently given in relation to the exhaustion and fatigue experienced in these land ascents. But we shall first give Boussingault's description of the sensations which he experienced on such an occasion.

In the year 1831 M. Boussingault succeeded in reaching the summit of Chimborazo, a feat which had been unsuccessfully attempted by many persons, and to which he was excited by the energy and perseverance of Humboldt thirty years before. When the traveller, accompanied by Colonel Hall and an Indian guide, had reached to a considerable height up the

* The use of the double negation was common among the writers of this period.

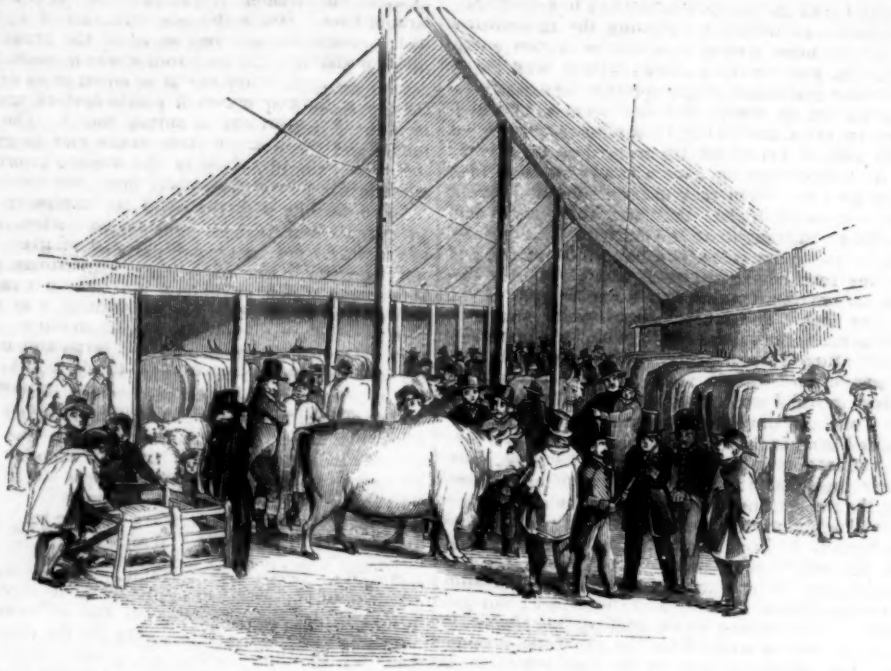
mountain, equal indeed to the height of Mont Blanc, the mules began to pause for breath at almost every step; they breathed quickly, and were evidently distressed. They continued to ascend slowly, and found the difficulty of breathing to be sensibly increased; the travellers stopped every eight or ten paces, by which they seemed to gain relief; and Boussingault remarked that the difficulty of breathing seemed to be greater when they were passing over a snowy surface, than when on the dry earth or rock of the mountain. Being unable to proceed higher that day, they descended, and slept for the night at the farm of Chimborazo. On the following day (Dec. 16) they set off again, and when they reached the limits of the snow, they dismounted from their mules, and made the rest of the journey on foot. The mules seemed quite incapable of proceeding farther; their ears, which are generally erect, were turned downwards; and, during the numerous pauses the animals made for the purpose of breathing, they did not cease looking on the plain beneath. The three travellers walked, or rather climbed, one behind another; and Boussingault says, "We preserved perfect silence during our march, for experience had taught me that at such a height nothing is more hurtful than a continued conversation; and when we exchanged a few words during a halt, it was in a low tone of voice. It is chiefly to this foresight that I attribute the good health which I have invariably enjoyed during all my ascents to volcanoes. I impressed, in a despotic manner, this salutary precaution on my companions. An Indian who neglected this advice on Antisana, by calling with all his force to Colonel Hall, who had lost the proper path while passing through a cloud, was in consequence attacked by giddiness and hæmorrhage." When they had reached near the summit of the mountain, the rarefaction of the air affected the travellers so strongly, that they were compelled to stand still every two or three steps, and often to sit down for some seconds; but the pain and inconvenience only lasted while they were in motion.

Now it has been generally the custom to attribute these unpleasant sensations to the insufficiency of the air, on account of its rarefaction, for the purposes of respiration. Part of the effect is undoubtedly due to this source, but it has lately been shown that a mechanical cause of a very curious kind produces a portion of the result. Humboldt, at a meeting of the Association of Naturalists at Jena, about three or four years ago, while describing the ascent of himself and Boussingault to the summit of Chimborazo, alluded particularly to the remarkable feeling of fatigue experienced while walking in very lofty regions; and remarked that this curious phenomenon may probably be explained by means of the equilibration of the bones produced by the pressure of the atmosphere. Professor Weber, of Göttingen, having previously directed his attention to this subject, Humboldt requested him to make an experiment with the air-pump, with a view to ascertain the action of atmospheric pressure on the joints of the thigh. In a work published by Weber, on the 'Mechanics of the Organs of the Human Body,' it is shown that the thigh-bone does not hang solely by the muscles and ligaments, nor even rests on the edge of the socket above, but is supported by the pressure of the air, which squeezes the two surfaces of the joint together. "By means of this equilibration of its weight," he remarks, "the bone acquires as perfect a power of turning in its socket as is necessary for the performance of such active movements as walking and running. If then the pressure of the air becomes diminished, a point must be reached when that pressure can no longer preserve the equilibrium of the weight of the bone. Another power, such for example as that of the muscles, must now take its place and support the bone; as otherwise the two surfaces of the bone would recede from each other. It is then natural to expect that when the bone is supported in this less advantageous manner, which not only causes an expenditure of strength, but also obstructs the movements of the bone owing to the stiffness that is induced in the muscles called into action, derangements and inconveniences should take place in walking, which would not occur if the bone were kept in equilibrium by the pressure of the air."

In conformity with the wishes of Humboldt, Weber procured a human thigh-bone connected with the bone of the pelvis, cut away such parts of the bones as were not necessary to the experiment, and cut through the membrane which enveloped the jointed parts. The bones were then hung up within the receiver of an air-pump, and the air gradually exhausted. Although the membrane which connected the two parts together was severed, yet the two bones remained as closely in contact as before; until the air had been exhausted to three inches of barometrical pressure, when the head of the thighbone sank. It became evident that the external pressure of the air kept the head of the bone closely in its socket so long as the pressure was anything considerable; but when the exhaustion was proceeding towards a vacuum, the pressure became inadequate to the support of the bone. Weights were attached to the lower bone, to make it approach more nearly to the real weight of the leg; and upon allowing the air to re-enter, the head of the bone was forced up into its former position in the socket.

The minutiæ of the experiment cannot be detailed here, but Weber's conclusion was as follows:—In the act of walking, while one leg rests on the ground, the other is lifted and carried forward a certain space by the action of the muscles. He thinks that the *weight* of the leg is not borne or felt to any great extent by the muscles, the muscular force being directed to the forward motion of the leg, while the leg itself is mainly supported by atmospheric pressure. When, however, the barometer sinks below twenty-four inches on high mountains, the muscles have not only to move the raised leg, but also to support a part of its weight, and this part increases five-sixths of a pound for every additional inch which the mercury sinks. In consequence of this unusual straining, the muscles will not only become fatigued, but as this straining is opposed to the swinging which has to be performed by the bone, a feeling of uneasiness and inconvenience occurs in walking, which, in Weber's opinion, explains the described sensation of fatigue, and also explains why aeronauts, whose legs are not exposed to the same exercise, do not experience this kind of fatigue. The fatigue experienced by persons who are lame from some defect in the thigh-joint is supposed to be often partly owing to a diminution, or rather disarrangement of the atmospheric support to the thigh-bone.

Culinary Delicacies of the Thirteenth Century.—A book just printed by the Roxburgh Club, from the original records of several ancient families, contains some very curious details of the style of living of the highest classes in England in the thirteenth and fourteenth centuries:—"The distinguished peculiarity, not only of England but of European taste in food, during the middle ages, was a predilection for the strong, and, in some cases, for the coarse flavours. To what other cause can we ascribe the appearance of the flesh of the whale, grampus, porpoise, sea-calf, sea-wolf, and other such fish, at the tables of sovereigns and people of rank, by whom they were considered delicacies? Some notion may be formed of the quantity of whale, &c. which was eaten in Europe during the thirteenth century, when we find Henry the Third, in Lent, 1246, ordering the sheriffs of London to purchase for him, in the city, a hundred pieces of the best whale and two porpoises."—*Manners and Household Expenses in the Thirteenth and Fourteenth Centuries.*



[Exhibition of Prize Cattle at the Horse Bazaar, Portman-square.]

CATTLE-SHOWS.

If we were to ask why Christmas is so proverbial for its hospitalities, would it *seem* to be very far from the truth if we were told to look for the cause in the abundant stores of good things which abound at that particular season? Look at the butchers' shops, at the goodly array which they present of sirloins, and legs and 'saddles' of mutton, all of the primest quality. The butcher himself, in dispensing these good things, exercises his calling with an air of increased importance. Those to whom a joint of meat is a rarity sit down to one for their Christmas dinner. The butcher knows that every customer whom he serves, and particularly those of the poorest class, will for one day at least be surrounded by plenty.

The abundant display of meat of more than ordinary excellence in the butchers' shops at Christmas is of course to be attributed to the desire of supplying a commercial demand; and which, in the first instance, acts upon the butcher, and through him reaches the grazier, and lastly the cattle-breeder. This object is effectually promoted by the spirit of competition. The cattle-breeder conducts his improvements with a view to advance his interests with the graziers; the grazier looks no farther for encouragement than to the butcher; and the butcher calculates upon being supported by the general mass of consumers, who must either communicate the stimulus or sustain it when once in activity.

The Smithfield Cattle Club was established about the close of the last century. Prizes were offered for the finest cattle and sheep, which were publicly exhibited in the metropolis; and the butchers purchased the stock as a means of enhancing the reputation of their shops. For the last two or three years, the show has been held at the Horse Bazaar, King-street, Portman-square, which, though not quite so convenient as could be wished, is preferable to the former exhibition-yard in Aldersgate-street. After the prizes have been adjudged, the public are admitted on payment of one shilling during the remainder of the week. At the show in December, 1841, there were exhibited fifty-seven oxen, nineteen cows, fifty-four sheep, and nine pigs, the animals of each species being the most perfect examples of the excellence to which they have been brought by the judgment and experience of breeders, graziers, and feeders. The Scotch oxen had in some cases been brought by steam-boats a distance exceeding five hundred miles; and in nearly every case the railways were made use of for the conveyance of both cattle and sheep from all parts of England. Formerly the animals were brought in vans to London, at a great expense, and the rate of travelling was necessarily slow. The interest of the show is, as may be expected, chiefly confined to certain classes. On entering the place of exhibition, the visitor at once perceives that the company consists chiefly of country gentlemen, cattle-breeders, graziers, cattle-salesmen, and butchers, with a sprinkling of townsmen, who still retain the relish for anything connected with country occupations which they had imbibed in early life. But the sight is one of rational interest to any man. Here he sees the results of exertions principally carried on during the last eighty years to unite and bring to perfection the most desirable points in the various breeds of domestic animals which were once peculiar to different parts of Great Britain, but are now spread in their improved form over every part of the country. In the gallery, a portion of which overlooks the show-yard, are to be seen agricultural implements and machinery of the latest and most improved construction; roots and plants adapted to our climate, but which are as yet comparatively unknown; specimens of artificial manures, and of the soils of districts differing from each other in their geological formation. In spite of all the advances which agriculture has made during the present century, how slowly do improvements extend beyond the intelligent circle in which they are first adopted; and it is one of the great advantages of

institutions such as the Smithfield Club to spread them more rapidly and widely by drawing the agriculturist from the secluded scenes in which he carries on his occupations, and bringing them before him in the manner best calculated to demonstrate their utility.

A prize ox or sheep is fatter than the ordinary market requires, and hence it is often supposed that the stimulus of prizes for bringing an animal into a state of unnecessary fatness is altogether a work of supererogation. But the power of reaching an excessive size is simply a test. A piece of artillery is tried by a charge greater than is ever required in ordinary practice; and an ox is fattened for exhibition beyond a useful marketable condition simply to show the capacity of the breed for acquiring, at the least expense of food, and at the earliest age, such a condition as the public demand really renders necessary. This course has been altogether successful; and to show that it has been so, we must advert to the period when improved breeds of cattle were less common than they are now. Culley, who was himself a great improver of cattle, and wrote a work on the subject at the commencement of the century, shows the manner in which the public have profited by the services of such men as himself. He speaks of a kind of oxen which had not then become extinct, that were "more like an ill-made black horse than an ox or a cow;" and the flesh, for he says it did not deserve to be called beef, was "as black and coarse-grained as horseflesh;" and yet such an animal was less profitable than an ox of the present improved breeds. After feeding on the best pasture for a whole summer, it was scarcely fatter or in better condition than at the commencement, as the food which it consumed went to the support of 'offal.' There were breeds of sheep which stood nearly in as great need of improvement. But what is the case now? A sheep can be reared fit for the market in two years, which formerly required three years, or even a longer period, and here is a saving to the consumer of above thirty per cent.; and in cattle, the small-boned, true proportioned animal of the improved breeds has in the same way been rendered above twenty-five per cent. more profitable. The meat thus obtained at a less expense of food and in a shorter space of time, is far superior in quantity and quality to the carcass of the old breeds. Within a century the average weight of cattle sold in Smithfield market has increased from 370 lbs. to 640 lbs.; and sheep and lambs, averaged together, from 28 lbs. to 80 or 90 lbs. Culley states (and improvements have been very widely diffused, as well as carried to a higher pitch since his time) that the difference between the coarse and fine, or between the best and worst parts of beef when cut up, was formerly not less than one hundred per cent.; but in the improved breeds the quality of the coarse parts is very much better, and the quantity of bone is also diminished. To the poorer class of consumers these advantages are of no trifling importance. In mutton, the difference between one part and another has also gradually become less and less. Sir Woodbine Parish, in his valuable account of the 'Provinces of La Plata,' relates a fact from which we may infer the national importance of possessing a superior breed of animals for food. A few years ago, he states, the breed of native sheep was so inferior, that it is doubtful whether the wild dogs would have touched the carcass; and they were commonly dried in the sun and used as fuel in the brick-kilns. This breed has recently been improved; and so much available food is added to the resources of the country.

The agriculture of a country which is too poor to enable the population to consume much animal food is necessarily in a very backward state. The manure which is produced in stall-feeding forms a very considerable part of the profit of fattening cattle; and enables the farmer to increase the produce of his arable land. Hence the best stimulus of agriculture is the prosperity and well-being of the great mass of the population; and no impulse which could be given to British agriculture would be equal in its productive results to the conversion of potato-feeders and bread-eaters into consumers of animal food.* The profit of turnip and other green crops would then be greatly increased; and the whole of the modern improvements in agriculture depend upon these rotations. It is a maxim of the farmer, that if no turnips, then no fat cattle or fat sheep, no manure, no barley, no clover, and no wheat. With turnips and similar crops we have fat cattle and fresh meat at Christmas, while our ancestors were compelled to kill off their cattle when the pastures began to fail in autumn, and they lived upon salt meat for the ensuing six months. Few live-stock could then be kept upon a farm, and the powers of the soil were reduced to the lowest point of fertility from the want of manure. All this is now changed, and the alteration has been a most beneficial one to all classes.

TRIAL BY ORDEAL.

[Concluded from page 40.]

THERE were yet many who failed at these trials, and these persons were often pursued with relentless severity: indeed, it is obvious that the same processes which by collusion might be made to throw a shield over the guilt of the powerful and influential, might also be converted into a means for the cruel persecution of the unprotected. M. Dinaux translates from an old chronicle the account of a young woman driven to the proof of ordeal under the all-comprehensive accusation of sorcery, in consequence of her having excited the indignation of the mayor of the palace by attempting to arouse one of the imbecile early kings of France to an appreciation of the duties and dignities of his station. Her arm was cruelly burned by the hot water, and she only escaped death itself by flying to the sanctuary of a monastery. A citizen of London, suspected of murder, says Hallam, having failed in the ordeal of cold water, was hanged by order of Henry II., although he offered five hundred marks for his life. It seemed, he adds, as if the ordeal was sometimes permitted to persons already convicted of a jury.

Ordeal of the Duel, or Wager of the Battel.—The duel was originally another form of trial, in which Providence was supposed to interfere for the protection of the innocent and the discomfiture of the guilty. Gibbon says respecting it, "But the trials by single combat gradually obtained superior credit and authority among a warlike people who could not believe that a brave man deserved to suffer or that a coward deserved to live. Both in criminal and civil proceedings the plaintiff or accuser, the defendant or even the witness, was exposed to mortal challenge from the antagonist who was destitute of legal proofs; and it was incumbent upon them either to desert their cause, or publicly to maintain their honour in the lists of battle. This law was introduced into Gaul by the Burgundi, and that which had been peculiar to some tribes of Germany was propagated and established in all the monarchies of Europe, from Sicily to the Baltic, and effectually resisted all the censure of popes and synods." Although the first written laws respecting the trial by

* Some recent statistical inquiries in the manufacturing districts show the great falling off which takes place in the consumption of meat during a period of stagnation in trade. The oxen, sheep, calves, lambs, and pigs slaughtered in the borough of Leeds declined from 2450 in 1835-6 to 1800 in 1841. In Rochdale in 1836 the number of oxen killed weekly was 180; in 1841 only 65 or 70.

battle are, Blackstone observes, those of Gundebald (501), preserved in the Burgundian code, yet the custom probably prevailed among various other of the northern clans or tribes, and judicial combats existed among the ancient Goths in Sweden.

We have no record of the custom prevailing in this country prior to the Conquest, but, from the tenor of some of the laws upon the subject, made by William I., Sir Francis Palgrave considers it probable that the ordeal of the duel existed in England prior to the Norman invasion, but became modified in its details after that event. Restricted in its early use to certain criminal cases, this mode of trial became afterwards almost indiscriminately extended as the means of decision of almost every description of crime and dispute. In the reign of Henry II. many cases were removed from its operation, by presenting to the accused the alternative of the jury, a change truly characterized by Glanvill as a noble improvement. Louis the Pious followed Henry's example in 1260, and the practice of the duel soon after became much restricted in most kingdoms of Europe. The last occasion of a trial by battle actually taking place in this country occurred in the thirteenth year of Queen Elizabeth, and was held in Tothill-fields. After lying dormant for more than two centuries, the very existence of the absurd statutes allowing these proceedings was nearly forgotten, when, in 1817, the public were astounded by the wager of battle being demanded and allowed by the King's Bench. The accuser wisely forbore proceeding, and in the subsequent year the statute was repealed.

Religious ceremonies also accompanied this form of trial, the two combatants making most solemn attestations and recriminations. The champions armed with batons (and in some cases with sword and lance) appeared in the lists at sunrise, and, after the various formalities, continued their contest until one of the two was killed (which rarely happened), or declared himself vanquished by pronouncing the odious word *craven*. If, however, the battle continued until the stars appeared, it was considered as drawn, and terminating in favour of the defendant. In civil causes the parties contended by means of deputies or champions, and the challenge delivered by the champion at our coronations has its origin in this custom; but in cases of felony the party must appear in his proper person, only in this case, if the appellant be a woman, an infant, one aged sixty, or lame, or blind, he or she might refuse the wager of battle, and resort to a jury: a peer, by reason of his dignity, and a citizen of London, by special charter, were also exempted: a thief or murderer, taken in the very act of committing his crime, was not permitted the wager of battle. When vanquished, even the hired champion in a civil cause became disgraced and infamous, and ever after incapable of serving on a jury or appearing as a witness. In cases of felony, if the accused was vanquished, he was either hanged or mutilated. In the reign of William Rufus, Geoffrey Bainard appealed William de Eu, charging him with treason: the defendant was vanquished, and afterwards mutilated by order of the king. If the accuser turns recreant, and cries '*craven*,' he was ever afterwards infamous, losing any privilege he might have possessed. Although many members of the church vigorously opposed these barbarian practices, others encouraged and participated in them. Dulaure, in his 'History of Paris,' cites numerous instances of religious communities applying for and obtaining of various monarchs the privilege of holding lists, and indeed priests themselves sometimes entered the arena. Geoffrey of Vendôme tells us of a duel between a monk and a canon. Considerable emoluments resulted from the fees paid for administering the oaths, the masses for those who fell, &c.

As before observed, ordeals of various kinds have prevailed in different parts of the world. Some African tribes apply a red-hot iron to the tongue: the negroes on the Guinea coast place certain herbs in the hands of the accused, believing that if guilty he will be burned by them. The natives of Pegu and Siam have ordeals of cold water, and the Chinese of both fire and water. At Malabar the person suspected is said to be obliged to swim a stream abounding in crocodiles, and at Siam both parties are exposed to a tiger, and he whom the wild beast attacks is supposed to be in the wrong. But of all people, the Hindoos present the most elaborate system of ordeal, whether we consider the varieties of the procedure or the number of the laws regulating their employment. An interesting account of these may be seen in the first volume of the 'Asiatic Researches.' In the sixteenth volume of the same work there is also a short account, by Mr Traill, of the ordeal as observed in Kamaon. In both these papers it will be found that some forms of ordeal, such as hot iron and hot oil (instead of water), resemble those formerly employed in Europe; while other forms, such as swallowing poison, exposing the hand to a hooded snake, drinking water in which idols have been washed, comparing the weight of the accused at different periods, &c., are peculiar to the East.

In closing this melancholy chapter of human folly and presumption, we must not, however, pass too hasty a judgment upon the ages in which these practices flourished; nor must we flatter ourselves that our own age is entirely free from similar absurdities, rendered even still more striking by the contrast they present to the habits and observances which should result from that advanced stage of civilization to which we have attained. On the one hand, we must remember that in the dark ages the law of brute force prevailed, and any institution which tended to the establishment of even an imperfect principle of justice and equality in its stead must be hailed as at least one step towards a better state of things; while the solemn prayers and imposing ceremonies, which took place prior to the trial, would frequently render its performance unnecessary, by reason of the confession of the accused when really guilty. "Perhaps," says Sir F. Palgrave, "there is no nation where the ordeal cannot be traced. It is common to the Old World and the New, to the Negro and the Esquimaux. A custom so universal, and at the same time so repugnant to our usual feelings, must have had some reason which extenuated its rashness; and in every case it appears to have been employed under the same circumstances. Suspicions of guilt are entertained, forcible and strong as not to be easily resisted by the understanding; and yet wanting in that degree of certainty which puts the judge at ease when he proceeds to the condemnation of the offender." The same author suggests that even the judicial combat might sometimes have had its advantages, as deciding by one trial of strength a right, which, left to the discretion of the competitors, might otherwise have consumed many lives in its determination. Finally, we must remember, in attempting a comparative estimate of these ages, that those which succeeded them (and indeed until comparatively recent times) substituted for the trial by ordeal the torture of the rack; a means of arriving at the truth no less preposterous, and even more cruel, whether we consider the sufferings of the wretched victim himself or the implication of innocent persons these forced him to become the unwilling instrument of producing.

On the other hand, is not the *duel* still in active operation among ourselves, and that even without the excuse which attended it in by-gone times? for who now believes it to be a "judgment of God?" It is a

mournful proof that the advancement of national morals is not always coincident with great intellectual progress and vast physical improvements. Were this the case, humanity could never be shocked, or common sense insulted, by the spectacle of a man cruelly aggrieved being compelled to offer his breast to the deadly aim of the individual who has wronged him, and he himself obliged to risk the imbruing his hands in the blood of his fellow-creature. Such proceedings are worthy only of that rude state of society wherein private vengeance is permitted to usurp the place of public justice, and in which the possession of personal address and brute courage are considered the objects of the highest ambition. Of late years men have opened their eyes in some measure to the folly and wickedness of this practice. May they do so more and more, for much remains to be done. It is from an enlightened public opinion that we are alone to look for its abolition. Severe penal laws, contrary as they are to the spirit of the age, will either be evaded or remitted. An improved and extended moral and religious instruction can alone teach mankind to wither that with their reprobation which now only flourishes in consequence of the encouragement they have in their ignorance bestowed upon it.

PECULIARITIES RESPECTING THE GROWTH OF FISHES.

[From a Correspondent.]

Among the three great families of birds, beasts, and fishes, by far the greatest dissimilarity observable in the various orders and classes into which they are divided is known to obtain among several species of fishes. That birds, or animals, or even fish, in a state of domestication, should somewhat depart from their natural shape, size, or quality, would be nothing remarkable; but when we find any considerable departure, whether in size or any other positive characteristic, from the class or order to which they belong while in an unconfined state of nature, it becomes an object calculated to arrest the attention of nature's observers, and one well deserving the observation of the physiologist.

Without attempting more than a superficial view of the subject, in order to establish the position here advanced, the common trout may be taken as an example of what is above referred to; and, probably, there is scarcely another well known fish that would answer so well to illustrate the disparity which sometimes takes place.

In glancing at the several families of wild animals of this country, from the smallest of the mouse tribe upwards to the stag or wild deer, we may meet with slight differences in size, colour, &c.; but unless there is some natural imperfection, take five, or fifty, or five hundred, promiscuously from any one family, and among those that have attained their full growth the difference in point of size will be hardly observable, or at least by no means striking. Indeed wild cattle might be instanced, a few specimens of which are still preserved in this country, and we find them 'as much like each other,' to make use of a homely expression, 'as peas.' Males and females frequently differ in size, in shape, and sometimes in colour; but such variations are the results of a general law, and do not affect the results we have stated. In birds there is as little, or even less, disparity in point of size. Observe, for instance, a flock of crows, of wild pigeons, of fieldfares, or of wild geese, and in the closest approach we can make to them, among five hundred the eye would hardly be able to detect any actual difference.

With regard then to the trout so common to our streams and rivers, among those that may be considered full grown, the difference, particularly in point of size, is often very remarkable: the smaller the stream, the smaller will be the trout found therein, may be taken as a general rule. But this rule does not apply to any but *small* streams; for a brook of considerable size, or very moderate sized rivers, will often yield trout equal both in size and quality to those found in our largest rivers. Something depends upon the supply of food; but it is well known that trout kept in *small* ponds or streams, where they have received a regular daily supply of food besides what the water afforded them, have never attained a large size, a size even approaching those that were permitted to occupy *large* ponds or lakes in the same neighbourhood, where both the water and the food were precisely of the same quality and character. With regard to small streams where the fish are not protected, it might be asserted with some show of reason that but few trout in such situations escape the angler or the net-fisher for any considerable number of years. This may be true as regards the generality of such streams, but in certain situations even small brooks possess their deep pools and secure holds, under banks or rocks, where none save the angler can possibly take them. Now even in situations like these, although fish of moderate size, and which have been known to occupy their haunts for several years, are sometimes met with, the largest of them would be considered of very inferior size if caught in larger streams or rivers. Moreover, when the small brook-trout breed, their progeny—at one, two, and three years old—are all diminutive, and, in point of size, in precise keeping with the parent fish. Nothing can demonstrate this more clearly than what is observable in the wilds of an uninhabited country. Take the forests of America for example, and there we find, where the trout that inhabit the streams which have never been disturbed by the presence of man, and may be said to be in a state of nature, that they are small in the small streams; while in the large streams and rivers they attain a size three or fourfold the magnitude. Among the grey or lake trout, found also in America, the largest lakes furnish specimens of the largest size. Thus in those inland seas connected with the western parts of Canada and the United States, a species of trout, known there as the salmon-trout, often grows to a weight of forty pounds or more; while in the second and third-rate lakes the same sort of fish very rarely attains to the weight of ten pounds; and in the very small lakes it is an extraordinary occurrence to meet with a salmon-trout weighing over four pounds. This is a very singular fact, since in many of the smaller lakes there is a depth of one or two hundred feet of water, and a most abundant supply of sundry sorts of small fish, as well as of other bait, on which trout delight to feed.

But there are numerous instances on record that the trout found in our own small mountain-streams may be made to increase remarkably in size under a change of circumstances, a single example of which may be sufficient to explain the case in point. It is now more than twenty years ago that the canal from Preston to Lancaster, commonly called the Lancaster Canal, was opened to Kendal in Westmoreland. An artificial feeder was necessary in order to supply this portion of the canal with water during dry seasons, in consequence of which a reservoir, covering a space of sixty or seventy acres, was formed in a portion of moorland about four miles east of Kendal. This sheet of water was formed without any excavating, simply by constructing a dam of twenty feet in height across the narrow part of a hollow between two ridges of hills which was watered by a small runnel that had its source in the moors above. Small, however, as this stream was, for it bubbled and danced along in a channel which was scarcely more

than a gutter with grass-grown sides, one or two feet over, it used to be pretty well supplied with small trout, mostly too small to attract the notice of the shepherd's boy, or any equally ambitious angler; nor was there in the distance this brook ran a single hole or secure place that by possibility afforded shelter and safety to any fish of larger size. After the rains and melting snows of two winters had filled this reservoir to the necessary height, the water was then occasionally drawn off for the supply of the canal through an iron grating, so narrow between the bars as not to admit the outward passage of any fish that weighed more than two ounces; and as it passed down a steep declivity with great velocity, there was no probability of any fish being able to ascend the current.

Some curiosity was felt in the neighbourhood, and particularly amongst anglers, with regard to this reservoir becoming stocked with such trout as would yield both amusement and profit. Two years had scarcely elapsed, however, when it was satisfactorily ascertained that there were many trout in the reservoir, and some of them of a tolerable size; and by the end of the fourth season angling in the reservoir had become quite common, when trout were caught that weighed from one to two pounds each: in after-years some of a still larger size. In a few years the "reservoir trout" became in such repute, and were so eagerly and perseveringly angled for, that the gentleman claiming the manorial rights erected a fishing-house which overlooked the whole sheet of water, and appointed a person to reside there and to keep off all intruders.

Sufficient has probably been said to prove that fishes, under peculiar circumstances, vary in size a great deal more than either birds or beasts. This has been proved over and over again in preserves and fish-ponds: supplies of pheasants, partridges, and other sorts of the feathered creation, when half-domesticated, and regularly fed and attended to, differ in size and appearance little or none from the same families abroad in the woods and fields. Neither is there more than a perceptible difference, in any respect, among the members of a covey, or a dozen coveys, when attended to in this way. But as regards most kinds of fish the case is very different; for when a pond or other secure piece of water is supplied with a stock of trout or pike from some stream or river, though they should all be equal in size at the time they were placed in their new quarters, in the course of not more than two or three years some among them will be found to have far outgrown all the rest. And so it is even in rivers: among the shoals that belong to particular pools or deep holes, one or two will often be found more than double the size of any of the rest, and yet evidently belonging to the same family, and of the same age with several of its companions.

Some writers have asserted, that among the numerous branches of the human family there exists a greater disparity, in point of size, than among any other order of created beings. This does not, however, seem to be borne out by facts; for unless we were to include Lilliputians and fabled giants, we should find in many families of fishes a far greater difference as regards size. Among salmon it has been ascertained that many may be considered full-grown that do not weigh over twelve or fourteen pounds; while one is occasionally caught of the weight of fifty or sixty pounds. In natural history it is customary to give the height, length, and bulk of most classes of animals; and the weight, as well as the height and spread of wing, of birds of every description; but as regards many sorts of fishes, this is altogether impracticable; for in many small streams a trout weighing half a pound would be accounted an extraordinary size, while in some of our rivers we occasionally meet with one of the weight of two or three pounds, and in others some that reach even to nine or ten.

Music of Nature in Norway.—Still as everything is to the eye, sometimes for a hundred miles together along these deep sea-valleys, there is rarely silence. The ear is kept awake by a thousand voices. In the summer there are cataracts leaping from ledge to ledge of the rocks, and there is the bleating of the kids that browse there, and the flap of the great eagle's wings as it dashes abroad from its eyrie, and the cries of whole clouds of sea-birds which inhabit the islets; and all these sounds are mingled and multiplied by the strong echoes till they become a din as loud as that of a city. Even at night, when the flocks are in the fold, and the birds at roost, and the echoes themselves seem to be asleep, there is occasionally a sweet music heard, too soft for even the listening ear to catch by day. Every breath of summer wind that steals through the pine forests wakes this music as it goes. The stiff spiny leaves of the fir and pine vibrate with the breeze, like the strings of a musical instrument, so that every breath of the night wind in a Norwegian forest wakens a myriad of tiny harps, and this gentle and mournful music may be heard in gushes the whole night through. This music of course ceases when each tree becomes laden with snow; but yet there is sound in the midst of the longest winter night. There is the rumble of some avalanche, as, after a drifting storm, a mass of snow too heavy to keep its place slides and tumbles from the mountain peak. There is also now and then a loud crack of the ice in the nearest glacier; and, as many declare, there is a crackling to be heard by those who listen when the northern lights are shooting and blazing across the sky. Nor is this all. Wherever there is a nook between the rocks on the shore, where a man may build a house and clear a field or two; wherever there is a platform beside the cataract, where the sawyer may plant his mill, and make a path for it to join some road, there is a human habitation, and the sounds that belong to it. Thence in winter nights come music and laughter, and the tread of dancers, and the hum of many voices. The Norwegians are a social and hospitable people; and they hold their gay meetings in defiance of their arctic climate, through every season of the year.—*Miss Martineau's Feats on the Fiord.*

Assam Tea.—The report of the Assam Tea Company for the past year is published. It states that the order of government for making over two-thirds of the experimental gardens and means of manufacture at Jeypore and its neighbourhood, had been carried into effect, but that the exertions of Mr. Bruce the superintendent had been baffled by want of labourers. The Chinese sent from Singapore, who were selected without discretion, and were not under proper control, quarrelled with the natives at Pubna, and became riotous; part were sent to gaol, and the rest refused to proceed to Assam. On arriving at Calcutta they were guilty of outrages, and were sent to the Mauritius, where the planters joyfully engaged them. The society then engaged a body of Dhangar Coles; but the cholera broke out amongst 650; many of whom died, and the remainder absconded. Disease had also thinned the other labourers, and destroyed or disabled seven Europeans. The product of last year, owing to these causes, was only 10,212lbs., which had been shipped to England. The total quantity of land fully and partially cleared amounts to about 7000 acres. The quantity of native tea-land cleared, cropped, and in actual production, amounts to 2638 acres, capable of producing, when the trees are ripe and in full bearing, at a quarter of a pound of tea per tree, 312,000lbs. The company have set up a saw-mill to assist in the manufacture of chests and other requisite articles. A little steamer, intended to ply between Calcutta and Assam, had arrived in the country. The expenditure, during the year, in England and India, was Rs. 5,49,460, of which the value of stock, in steam-boat, saw-mill, boats, and implements, is Rs. 1,51,941, and the labour lost and unproductive amounts to Rs. 1,23,275. The estimate of the prospective return of tea for the next five years, when it is supposed that the tea-lands will be in full perfection, is as follows: —1841, 40,000lbs.; 1842, 80,000lbs.; 1843, 160,000lbs; and so on, increasing 80,000lbs. each year.—*Asiatic Journal.*